

BARNEYS CANYON MINE
P.O. Box 311
Bingham Canyon, Utah 84006-0311
(801) 569-7200
FAX (801) 569-7190

David I. Hodson
General Manager

RECEIVED

SEP 04 1992

DIVISION OF
OIL GAS & MINING

NY 635/009
DOGM
MINERALS PROGRAM
FILE COPY

Kennecott

September 2, 1992

Mr. Don A. Ostler
Executive Secretary
Division of Water Quality
Utah Department of Environmental Quality
288 North 1460 West
Salt Lake City, Utah 84116

RE: Stockpiled Sulphide Ore

Dear Mr. Ostler:

In reply to your letter of August 20 concerning the temporary stockpiling of sulphide ore we would like to provide further clarification of the historical reasons for the stockpiles existence, of the de minimus impact of the stockpiles on groundwater quality and of our intentions for handling sulfide ore in the future.

The existence of sulphide material within the ore bodies at Barneys Canyon Mine has been known since the project exploration stage and this was described at some length in the original Notice of Intent to Mine which was presented to DOGM in September 1989 (after more than a year of preparatory discussions). The NOI indicated that up to 4% of material dumped at the mine site would be sulphide and that this material would be mixed with non-sulphide waste, ensuring a minimum cover of 3 feet of oxide waste over the sulphide material. EPA approved tests indicated that the sulfide disposed of in this way would have minimal acid generating potential and EP toxicity analysis showed that soluble metal quantities would be far below EPA limits (by a factor of 100 in most cases). It was also noted in the NOI that:

"It is currently Kennecott's intention to mine the ore fraction of this material (i.e. the sulphide) and haul it to its Magna Smelter The usefulness of this sulfide ore as a flux cannot be determined until the mining operations expose the material. If this material cannot be used as smelter flux, current plans call for it to be disposed in the mine dumps . . .".

It was found that the sulphide was not suitable as a flux but there was believed to be potential for treating the higher gold grade material by flotation (after crushing and grinding) so that a high sulphide concentrate could be smelted while leaving a clean oxide tailing which would be amenable to standard heap leaching.

The potential for this process to economically recover gold while also removing the sulphide bearing waste in a safe manner was considered good enough to warrant further research and so, as a temporary measure, the gold bearing sulphide was stockpiled while details of the process could be worked out.

At the present time there is a total of 244,100 tons of stockpiled material distributed in 3 piles. The material is run of mine ore (not tailings) and contains on average less than 3% sulphur as sulphide. The stockpiles are situated on top of major waste dumps containing a total of more than 25 million tons of oxide waste material. (i.e. sulphide stockpiles represent less than 1% of total material dumped). In early 1993 it is our intention to complete a feasibility study concerning the sulphide process and if the results are positive we would aim to bring a sulphide plant into operation in the second half of 1994. According to our latest mining plan the total sulphide stockpiled would be as follows:

August 1992	-	244,101 tons (current total)
January 1993	-	254,000 tons
January 1994	-	285,000 tons

Assuming plant start up in mid 1994 the stockpiles would reduce to 240,000 tons by January 1995 and continue to reduce to zero in the longer term.

In the event that the process feasibility study is unsuccessful we would take immediate steps to cover the sulphide material with at least three feet of oxide waste and would not stockpile any new material.

For the interim period until a process plant is approved and constructed we propose to continue stockpiling as necessary (approx. 40,000 tons addition by the end of 1993). The stockpiles will be shaped and smoothed so that any rainfall will run off the sulphide onto the oxide waste base - the shaping will be similar to that shown to you during your visit here on August 18th. Drainage will be controlled so that run off will pond on the waste base material and not run off onto natural ground surface.

The compacted waste dump surface has a permeability of 4.88×10^{-5} cm/s as measured by our consultants, SHB, in tests carried out at your suggestion on August 18th. We believe that there will be minimal percolation of run off water through the sulphide material and almost no percolation through the waste dump base. (The water collected will evaporate in a short time from the top of the dump surface.). It is also worth noting that the sulphide piles are at least 150 feet above the groundwater surface at the Barneys Canyon Mine and several hundred feet above groundwater at Melco. Thus the possibility of acid water or sulphates being carried into the groundwater system can be considered zero.

Page 3
D. A. Ostler
September 2, 1992

We believe that the risk to groundwater quality is de minimus and that the proposed control methods, though simple, are more than adequate to ensure no impact on groundwater quality.

We trust the above is sufficient explanation of the situation and request your approval of the temporary stockpiling methods as outlined above.

Sincerely,



D. I. Hodson
General Manager
Barneys Canyon Mine

cc: L. Mize
M. Croft
T. B. Braun
W. C. Dodge
D. Z. Skolasinski
Division of Oil, Gas and Mining
Salt Lake City/County Health Department